

A Unified Theory of Practice in Early Intervention/Early Childhood Special Education: Evidence-Based Practices

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Over the last decade, the field of early intervention/early childhood special education (EI/ECSE) has emerged as a primary service for infants and preschool children with disabilities and their families. Systems for providing early intervention for infants and toddlers exist in every state, and all state Departments of Education are responsible for special education for preschool children. In EI/ECSE, a unified theory of practice has emerged and draws from a range of psychological and educational theories. A strong, evidence-based set of practices that service providers and caregivers use to promote the development and well-being of infants and young children with disabilities and their families underlies this theory of practice. The purpose of this article is to describe the tenets of this theory and identify evidence-based practices associated with each.

Citizens of the United States, like citizens of many other countries, have made a commitment to their nation's care, welfare, development, and education of infants and young children with identifiable disabilities, or at clear risk of disability, and their families (Hanson, 2003). Societal values dictate that support should be given to those most in need, such support should be well planned and systematic, and practices should be based on evidence of their effectiveness, when available. These values are operationalized in a broad system of practices termed *early intervention/early childhood special education* (EI/ECSE). From this system of service, a theory of practice, consisting of a set of tenets, is proposed. EI/ECSE has long been an empirically based field, and in most cases, the tenets of this theory are supported by research (evidence). However, some practices precede empirical verification but are so fundamental to the field of EI/ECSE, and indeed to that of special education in general, that they serve as cornerstones for the theory of practice. In such cases, these practices are identified as value based.

What Is Special About EI/ECSE?

EI/ECSE occupies a unique niche in the field of education. Having historical roots in the special education field (Safford, Sargent, & Cook, 1994) and having blended instructional methodology to become more compatible with the early childhood

education field (Wolery & Bredekamp, 1994), EI/ECSE effective practices draw from both professional literatures and research. EI/ECSE's evolution from the practices of the late 1960s to current practices has been fostered by the U.S. Department of Education's (i.e., Office of Special Education Programs) support of innovation, research, systems change, and service provision (Gallagher, 2000). States, however, are ultimately responsible for the implementation of services. In all states, early intervention programs for infants/toddlers and their families are available and monitored by a lead agency that the governor appoints, and state Departments of Education are responsible for services to preschool children. These two separate but related systems provide the service context for effective practice. EI/ECSE is different from early childhood education in its focus on family-centered services (i.e., especially at the EI level), individually planned educational programs, and specialized teaching approaches. It differs from school-age special education in its focus on early developmental skills that are precursors for current and later school success and, again, in its emphasis on family in many programs.

Conceptual/Theoretical Framework

Through its evolution, EI/ECSE has drawn from several different and, on the surface, incompatible theoretical perspec-

tives. Current EI/ECSE practice is seated firmly in the traditional behaviorist theories of Skinner and Pavlov (Strain, McConnell, Carta, Fowler, Neisworth, & Wolery, 1992), the cognitive-behavioral tradition of Bandura (1976), and the neobehavioral blending of contextualism and behavior analysis (Odom & Haring, 1994). Major contributions of this perspective are practices having a strong empirical base, such as incidental teaching, functional assessment, positive behavior supports, and systematic instruction. Other contributions include attention to individualization and assessment practices for monitoring changes in children (McConnell, 2000).

Constructivist theory also exerts a primary influence on EI/ECSE practice. This theory has been shaped by the writings of Piaget and Vygotsky (Fosnot, 1996), the educational philosophy of Dewey (Greene, 1996), the more recent applied and theoretical work of Feuerstein and colleagues (Feuerstein, 1980; Klein, 2003), and the sociocultural research of Rogoff, Baker-Sennett, Lacasa, and Goldsmith (1995) and Lave and Wenger (1991). Constructivist theory is the foundation of the guidelines for developmentally appropriate practices in early childhood education, as described by the National Association for the Education of Young Children (Bredekamp & Copple, 1997). Curricula for young children with and without disabilities have been based on a constructivist theoretical framework (e.g., Haywood, Brookes, & Burns, 1992). Major contributions of this perspective are an understanding of the content of children's development, an appreciation of the importance of children's self-initiated actions on and interactions with the environment, and recognition of the critical role adults play as mediators of children's learning.

Although some EI/ECSE professionals distance themselves from the early psychoanalytic work of Freud, Adler, and Jung, current developmental psychodynamic theory contributes to practice in EI/ECSE (Emde & Robinson, 2000). Difficulties in attachment formation have long been noted for some infants with disabilities and their caregivers (Emde & Brown, 1978; Fraiberg, 1975). The emphasis on building relationships with caregivers has guided practice in many infant programs (Bromwich, 1997), is also found as a central feature in some programs for preschool-age children with disabilities (Greenspan & Wieder, 1999), and is of importance for all programs in EI/ECSE. The major contributions of this theory are the emphases on establishing and strengthening relationships with primary caregivers and on young children's social-emotional development.

Ecological theory also influences practice in EI/ECSE. Several useful ecological theories exist, but Bronfenbrenner's (1979) is the most prominent and influential. His ecological systems theory underlies our understanding of the many factors influencing EI/ECSE services (Odom, 2001) as well as how services are provided for families and children. Ecological psychology (e.g., Barker, 1968), in combination with applied behavior analysis (Morris & Midgley, 1990), serves as the foundation of ecobehavioral assessment, which has been used to identify influential elements of classrooms (Ager &

Shapiro, 1995; Odom, Favazza, Brown, & Horn, 2000). The major contributions of ecological theories are (a) its emphasis on factors within the immediate setting (e.g., home, classroom); (b) the interrelating influences of different settings in which a child participates (e.g., communication between parents and teachers); and (c) the influences of the broader ecology (e.g., state policies, cultural values).

Unified Theory of EI/ECSE Practice

EI/ECSE has moved from a set of practices based on single theoretical perspectives (e.g., behavioral, cognitive) to a *theory of practice*, which others have called a *theory of change* (Brookes-Gunn, Berlin, & Fuligni, 2000; Weiss, 1995). This theory exists as a set of shared beliefs or *shared exemplars* (to use a concept proposed by Kuhn, 1970) among practitioners and scholars, with each having a body of research and/or strongly held and commonly shared values for its foundation. These shared beliefs, which constitute the tenets of the theory of practice, appear in Table 1. Because this theory of practice draws from different psychological and educational theories, it could be described as a *unified* theory of early intervention practice. In the following sections, we describe each tenet of this theory and identify evidence-based or value-based practices exemplifying these tenets (see Note).

Families and Homes Are Primary Nurturing Contexts

A fundamental supposition of EI/ECSE is that families and homes, except in cases where there is abuse or neglect or severe privation, are primary nurturing environments for infants and young children with disabilities. The operating assumption is that children with disabilities who live with their families and participate in community life (i.e., the natural environment) are more likely to be similar to their siblings and age-matched peers without disabilities than if they lived in a facility with only individuals who have disabilities. This principle countered the practices of the first half of the 20th century, in which professionals advised parents to place their young children with disabilities in residential facilities. One thing that is special about EI/ECSE is the support it provides to families, which in many cases allows their infant to remain a member of the family. This principle has implications beyond residence; it applies to classrooms (Bailey & McWilliam, 1990), the activities in communities (Dunst et al., 2001), and the nature of resources and supports for their families (Dunst, 2000).

Rearing a young child with disabilities, however, often presents challenges beyond those of rearing a child without disabilities. Families frequently report needing information about their child's disability, service options, available resources and supports, and other issues (Bailey, Blasco, & Simeonsson, 1992). The EI/ECSE field has long recognized the

TABLE 1. A Unified Theory of Practice in EI/ECSE: Fundamental Tenets and Evidence-Based Practices

Families and homes are primary nurturing contexts
<ul style="list-style-type: none"> • Family-centered practices (Thompson et al., 1997) • Social support and resource-based models (Trivette et al., 1997) • Parent-implemented milieu teaching approaches (Kaiser et al., 2000) • Parent-education programs (Mahoney et al., 1999)
Strengthening relationships is an essential feature of EI/ECSE
<ul style="list-style-type: none"> • Relationship-based programs (Rauh et al., 1988) • Parent-infant interaction programs (Girolametto et al., 1994) • Peer-interaction programs (Odom et al., 1999) • Professional collaboration programs (Lieber et al., 2001)
Children learn through acting on and observing their environment
<ul style="list-style-type: none"> • Contingently responsive environments (Landry et al., 2001) • Participation in natural learning opportunities (Dunst et al., 2001) • Participation in classrooms employing evidence-based practices (Schwartz et al., 1996)
Adults mediate children's experiences to promote learning
<ul style="list-style-type: none"> • Embedded learning opportunities (Horn, Lieber, Li, Sandall, & Schwartz, 2000) • Activity-based intervention (Losardo & Bricker, 1994) • Routine structuring (Wolery et al., 1998) • High-probability requests (Davis et al., 1994) • Prompting and prompt-fading strategies (Venn et al., 1993)
Children's participation in more developmentally advanced settings, at times with assistance, is necessary for successful and independent participation in those settings
<ul style="list-style-type: none"> • Learning opportunities occurring in community and home contexts (Dunst, Hambry, et al., 2000) • Participation in inclusive preschool play groups (Guralnick et al., 1996) • Social integration interventions in inclusive settings (Jenkins et al., 1989)
EI/ECSE practice is individually and dynamically goal oriented
<ul style="list-style-type: none"> • Goal identification linked with learning strategies (Wolery, 2000) • Parent input solicited by routines-based interviews (McWilliam, 1992) • Demands of environments source of goal identification (Thurman & Widerstrom, 1990)
Transitions across programs are enhanced by a developmentally instigative adult
<ul style="list-style-type: none"> • Assessing the demands of the next setting and teaching needed skills (Ager & Shapiro, 1995) • Preparing personnel and/or family for transition to next setting (Wyly et al., 1996) • Interagency agreement to smooth transitions (Rosenkoetter et al., 2001)
Families and programs are influenced by the broader context
<ul style="list-style-type: none"> • Family-centered planning (McWilliam et al., 1998) • Resource mapping (Trivette et al., 1997) • Designing culturally sensitive programs (Catlett et al., 2000)

value of working with families, but that work has been refined by research and practice. Early programs focused on teaching parents to teach their children (Shearer & Shearer, 1972), and effective contemporary models exist for teaching parents to foster children's communication (Kaiser, Hancock, & Nietfeld, 2000), social (Mahoney & Powell, 1988), and behavioral skills (Strain & Timm, 2001). The benefits of this practice continue to be debated (Dunst, 1999; Mahoney et al., 1999), but a consensus exists that professionals' interactions with families should emphasize support as well as education, when identified as a priority, for parents (Trivette & Dunst, 2000).

The empirical linkages between family support and child progress are now being established (Thompson et al., 1997), with the best example being Dunst's (1999) structural equation model analysis of family support and child outcomes. Dunst (2000) proposed a conceptual model in which social support promotes family well-being, which in turn allows families to engage in responsive interaction styles with their children, thereby providing the children with opportunities and help in learning important skills. The professionals' role in this model is to work collaboratively with families; to strengthen families by helping them secure needed supports and resources; to provide individualized and flexible help; and to capitalize on families' existing competencies and strengths (Trivette & Dunst, 2000). Families characterize professionals who provide family-centered services as (a) being positive with and about families, (b) being responsive to families' concerns and priorities, (c) having friendly interaction styles, (d) being sensitive and empathetic, and (e) focusing on the whole family rather than on only the child with disabilities (McWilliam, Tocci, & Harbin, 1998). Such professionals also are competent in working with the child and know about community resources (McWilliam et al., 1998). Knowledge of community resources (e.g., informal activities and events, social services) in turn helps professionals assist families in arranging natural learning opportunities for their child (Trivette, Dunst, & Deal, 1997).

Strengthening Relationships Is an Essential Feature of EI/ECSE

Establishing positive relationships between the parents (or other caregivers) and their infants/young children; among children with disabilities and their peers; and among professionals working with infants, children, and families is an essential goal of EI/ECSE. A large literature exists on the importance of attachment between infants and caregivers for later development (Denham, 2001). Difficulties may arise in parent-infant interactions and relationship formation for some infants with or at risk for disabilities (Vondra & Barnett, 1999). Some early intervention programs use relationship-based interventions, with the goal of establishing positive relationships early in life (McCollum & Hemmeter, 1999). For example, for premature infants in neonatal intensive care units, teams of professionals from the Vermont Intervention Program for Low Birth-

weight. Infants helped mothers interpret their infants' behavioral cues and appreciate their infants' temperaments as a way of enhancing mother-infant relationships and interactions (Rauh, Achenbach, Nurcombe, Howell, & Teti, 1988). This project led to positive long-term outcomes (Achenbach, Howell, Aoki, & Rauh, 1993). For older infants with disabilities, interventions designed to promote positive interactions between mothers and infants have resulted in positive increases in reciprocal interactions, in parenting styles, and in collateral effects on children's development (e.g., Girolametto, Verbey, & Tannock, 1994). Similarly, Bromwich (1997) described the positive outcomes of her early intervention program over a 20-year period. The unique feature of this project is that it first focused on promoting parents' and infants' mutual enjoyment as a basis for forming attachment before emphasizing parents' promotion of children's developmental skills.

EI/ECSE programs also emphasize relationships among peers. For all young children, establishing positive peer relationships is a critical developmental task built on peer-related social competence. Such social competence is problematic, however, for some children with disabilities (McConnell & Odom, 1999). Guralnick (1990) and Strain (1990) suggested that participating in inclusive classes may foster peer-related social competence and peer relationships. However, evidence is mixed about the effectiveness of inclusive placements when specific programming to promote social integration is not provided (Guralnick, 1999; Jenkins, Odom, & Speltz, 1989). Some young children with disabilities appear to be well accepted by peers, whereas others are actively rejected (Odom, Zercher, Li, Marquart, & Sandall, 2003). Brown, Odom, and Conroy (2001) identified naturalistic approaches, social integration activities, and explicit social skills training as evidence-based interventions for children with disabilities who are socially rejected.

Relationships among professionals working in EI/ECSE programs also may have a direct impact on infants and young children with disabilities and their families. EI/ECSE is a multidisciplinary endeavor, and barriers to collaboration between the adults on a team may sometimes exist. These barriers include poor communication, lack of respect, lack of time for planning, and philosophic differences (Lieber et al., 1997). Research has suggested that professionals in early intervention programs prefer working in a collaborative manner (Buysse, Schulte, Pierce, & Terry, 1994) and that cohesive communication between special education and early childhood teachers in inclusive programs leads to greater engagement for children with disabilities (McCormick, Noonan, & Heck, 1998). The challenge has been to establish program features that support and enhance positive relationships among adults. One approach is to use a problem-solving strategy for team building (McWilliam, 1996). Lieber et al. (2001) described the use of such an approach in an inclusive program implemented over a 2-year period. Positive changes occurred in joint participation in program development, shared philosophy, shared ownership of children, administrative support, and positive relationships among the professionals.

Children Learn Through Acting on and Observing Their Environment

Many factors influence children's learning and development, including their genetic makeup, the status of their central nervous system, their health and physiological functioning, and the risk and opportunity variables in their families and communities. However, since the early 1960s, an appreciation has grown for the power of proximal environments and children's experiences in shaping their own learning and development. Concomitant with these developments was a dramatic revision in the view of infants' competence. Whereas infants' and young children's learning was once seen as emerging from biological maturation or from environmental shaping, the current perspective is that infants actively adapt to, learn about, master, control, and understand their worlds (Sameroff & Fiese, 2000). As such, their experiences—interactions with their social and physical environments—are opportunities for learning (Dunst, Hambry, Trivette, Raab, & Bruder, 2000).

The active nature of young children's learning leads to two major practice implications. First, infants and young children actively engage in activities and events and use materials that hold interest for them (Odom et al., 2000). Such engagement leads to competence and mastery, which in turn leads to additional interests (Dunst, Herter, & Shields, 2000). Thus, attending to child interests and child-initiated interactions is important. For infants and young children, contingently responsive toys, physical environments, and social interactions are positive forces in promoting learning and development (Landry, Smith, Swank, Assel, & Vellutino, 2001; Wachs, 1979). For preschool children with disabilities, Schwartz, Carta, and Grant (1996) documented the relationship between engagement in effective learning opportunity and language outcomes. Promoting children's engagement is an essential practice in EI/ECSE classes (Wolery, 2000).

To foster positive outcomes, service providers must influence large proportions of children's experiences (McWilliam, 2000). Hobbs (1966), in describing his ecological approach to working with children with emotional difficulties, stated that "every hour in every day, is of great importance to a child, and when an hour is neglected . . . teaching and learning go on nonetheless and the child may be the loser" (p. 1109). In home-visiting programs, partial-day classes, clinic-based programs, and many inclusive classes, specialists have little contact with the child. Thus, interventions for children must be mediated through adults who often do not have formal specialized training (McWilliam, Wolery, & Odom, 2001). In those contexts, there may be a concern that instruction for the child is not specifically planned or implemented as it would be in a more specialized setting. To counter this concern, researchers have designed effective interventions that may be implemented in natural environments by staff or family members who are naturally present in the home (Rule, Losardo, Dinnebeil, Kaiser, & Rowland, 1998).

Adults Mediate Children's Experiences to Promote Learning

Adults in EI/ECSE mediate children's experiences to promote learning. The term *mediate* is used to differentiate the teacher's actions from the common perceptions of terms such as *teach* and *instruct* (i.e., an adult delivers a preplanned set of trials or body of information in a relatively restricted context to receptive but inactive learners). Effective adult mediation requires planning, is goal directed, and is systematically practiced. For young children, most interventions should (a) be used during play and other routines and activities, (b) be embedded into and distributed across activities (Losardo & Bricker, 1994), and (c) occur when they are contextually relevant (Horn, Lieber, Li, Sandall, & Schwartz, 2000; Venn et al., 1993). Learning is promoted by structuring the social and physical aspects of the environment and using specialized intervention practices (Wolery, 2000).

Environmental structuring may promote engagement, communication, interaction, or play. Possible changes in the structure of the classroom include varying the number and size of play areas, placing one play area near another, arranging the materials within each play area, and specifying the rules of access to each area (Sainato & Carta, 1992). For example, selecting materials based on children's preferences, rotating materials in and out of play areas, and providing choices about toys/materials results in more engagement (McWilliam et al., 2001). Assigning staff members to areas and activities, rather than to children, often results in more engagement and less waiting (LeLaurin & Risley, 1972). Routines and transitions between activities also can be used to teach new skills (Wolery, Anthony, & Heckathorn, 1998) but require careful structuring to reduce down time (Sainato, Strain, Lefebvre, & Rapp, 1987). Structuring play activities by providing specific props and roles during dramatic play leads to more interactive behavior (DeKlyen & Odom, 1989).

A variety of specialized practices have strong empirical support. As with older students, reinforcement of desired behaviors and reinforcement-based procedures have proven effective in early childhood programs (Odom & Strain, 2002). For example, the high-probability request procedure has been studied for increasing children's compliance with adult requests as well as social contacts between preschoolers (Davis, Brady, Hamilton, McEvoy, & Williams, 1994). For promoting language and communicative skills, procedures such as modeling, expanding children's statements, and incidental teaching are quite effective (Kaiser, Yoder, & Keetz, 1992). As noted previously, social skills are promoted through group friendship activities (McEvoy et al., 1988) and peer-mediated strategies (Odom et al., 1999). Procedures such as simultaneous prompting (Sewell, Collins, Hemmeter, & Schuster, 1998), constant time delay (Holcombe, Wolery, & Snyder, 1994), progressive time delay (Venn et al., 1993), and graduated guidance (Bryan & Gast, 2000) are effective in teaching a variety

of behaviors. When these procedures are used, they should be embedded into and distributed across activities (Wolery, 2001).

Participation in More Developmentally Advanced Settings Is Essential

Participation in more advanced settings, as a practice, is supported most directly by the literature on situated cognition (Rogoff et al., 1995) and legitimate peripheral participation (Lave & Wenger, 1991). From these perspectives, individuals acquire important skills for specific contexts by participating in those contexts, often with assistance or guided participation from a caregiver or more competent peer. Situated learning research, which has been the foundation for instruction in other areas of education (see Cobb & Bowers, 1999, regarding application to math education), is just beginning to be applied in EI/ECSE and shows substantial promise. An example of such application is the recent research of Dunst, Bruder, Trivette, and colleagues (Dunst et al., 2001; Dunst, Hambry, et al., 2000), who have identified a large range of learning opportunities existing in natural settings such as the home and community.

Learning through participation in developmentally advanced environments has long been cited as a rationale for inclusive or integrated programs (Bricker, 1978). Inclusive settings may provide a *developmental press* through a more cognitively, linguistically, and socially stimulating environment than occurs in nonintegrated special education settings. Given the necessary and appropriate assistance, this developmental press could lead to the acquisition of more advanced skills and successful participation in the inclusive settings. For example, the research of Guralnick and Paul-Brown (1977, 1980) has repeatedly documented that typically developing children reduced the complexity of their communications when interacting with classmates with disabilities, and Guralnick (1981) proposed that such adjustments may facilitate language acquisition. Similarly, Guralnick, Connor, Hammond, Gottman, and Kinnish (1996) found that children with disabilities in inclusive play groups engaged in more advanced forms of play and more frequent social interactions than when they were in groups that consisted solely of peers with disabilities. For young children with autism, Strain (1983) demonstrated that increased levels of social interaction resulting from a peer-mediated intervention generalized to play settings in which typically developing children participated but not to settings in which there were only children with disabilities. As a result of this and other early research (see Odom & McEvoy, 1988, for a review), a recommended practice in EI/ECSE is to place children in inclusive settings and provide the support necessary to ensure successful participation (Sandall, McLean, Milagros, & Smith, 2000). Research-based strategies for providing such support were described previously (e.g., curriculum modifications, naturalistic interventions, adult prompt-

ing, peer-mediated interventions) and have served as the basis for curricula and training in EI/ECSE (Gold, Liepack, Scott, & Benjamin-Wise, 1999; Sandall, Schwartz, & Joseph, 2001).

EI/ECSE Practice Is Individually and Dynamically Goal-Oriented

EI/ECSE is an inherently individualized endeavor, and a strongly held value-based tenet is that caregivers and service providers must establish individualized goals for children and the strategies used to meet those goals (Wolery, 2000). This is particularly necessary in the field of EI/ECSE because of the varied characteristics of children who are eligible for services and the range of severity levels exhibited by infants and young children. The range of disabilities with which a given EI/ECSE professional works is broader than that of their colleagues who teach older children. The curriculum in early childhood often focuses on developmental and early academic skills (e.g., social, communication, early literacy). Thus, individualized assessment in these areas is essential (Neisworth & Bagnato, 2000). Parental input about goals is valued and often facilitated by routines-based interviews and checklists that identify problematic parts of the day (McWilliam, 1992).

Because young children and the settings in which they spend time change rapidly, goals require careful monitoring and frequent adjustment (Wolery, 1996). Individualization, of course, is not restricted to children's intervention goals and practices but also applies to interactions with families. Families who participate in EI/ECSE are often quite different from one another in terms of family structure, family functioning, aspirations for their child, available resources and supports, history, and experiences. As a result, a "one size fits all" approach to working with and interacting with families is viewed as an ineffective and inappropriate practice in the field (Trivette & Dunst, 2000).

Program Transitions Enhanced by Adult or Experiences

Bronfenbrenner (1979) proposed that an ecological transition occurs when there is a change in settings and/or roles for an individual and that such transitions are a result of and potentially an instigator of developmental processes. The developmental potential of new settings is enhanced if children make the transition with one or more individuals with whom they shared the previous setting. During the early childhood years, children with disabilities and their families experience transitions across settings and agencies, including the following: (a) neonatal intensive care unit to the home, (b) home to EI services provided by agencies in the state, (c) EI program to an inclusive or special education preschool program, and/or (d) preschool program to a kindergarten or traditional school-age classroom. Such transitions place new demands on and create new growth opportunities for children, their families,

and care providers (Atwater, Orth-Lopes, Elliott, Carta, & Schwartz, 1994; Odom & Chandler, 1990).

Because characteristics and demands of settings differ, preparing children with disabilities for new settings is theorized to support successful participation and learning (Ager & Shapiro, 1995). In the field of EI/ECSE, there has been a long tradition of transition planning and support for infants, young children, and families being woven into policies and laws (Rosenkoetter, Whaley, Hains, & Pierce, 2001). Service providers have attempted to provide "developmentally instigative" individuals or experiences to promote the continuity of experiences across settings and ideally to create a seamless service system (Sainato & Morrison, 2001). Research-based strategies include identifying essential skills necessary for success in the new setting (Johnson, Gallagher, Cook, & Wong, 1995; McCormick & Kawate, 1982), assessing the children's skills on those essential skills and teaching them the skills needed in the next setting (Ager & Shapiro, 1995; Hains, 1992), and preparing personnel in the home or new class for the transition (Bruder & Chandler, 1996; Wyly, Allen, Pfalzer, & Wilson, 1996). Similarly, an essential component of supportive transition practices has been formal and informal interagency agreements that pave the way for infants, young children, and families to move from one program or service agency to another (Rosenkoetter et al., 2001).

Broader Ecological Contexts Influence Families and EI/ECSE Programs

Pushed by ecological systems theory, EI/ECSE professionals recognize that factors outside the immediate environment of a child and family exert an influence on development and learning (Thurman, 1997). Bronfenbrenner (1979) conceptualized these factors as occurring at the microsystem (i.e., in a classroom or home), mesosystem (e.g., transition planning, professional collaboration, family issues), exosystem (e.g., social policy), and macrosystem (e.g., culture) levels. With the passage of the Education of the Handicapped Act Amendments of 1986, service providers for infants and toddlers have adopted a family-centered approach (Trivette & Dunst, 2000); have broadened individualized planning to include the family through the Individualized Family Service Plan (IFSP); and have accessed services in the community for children and families, rather than following the classroom-based service model traditionally used for school-age children. These practices build support for families as a means of creating a more developmentally facilitative environment for infants and young children with disabilities. Trivette et al. (1997) have documented the relationships between access to social support and the progress young children make on developmental objectives. Intervention approaches for providing such support for families and children are a foundation for practice in EI/ECSE.

A second important reflection of an ecological perspective has been the recognition of the importance of the cultural

and linguistic diversity of children, families, and communities. Research in EI/ECSE has documented how cultural and linguistic diversity affect access to services (Hanson, Gutierrez, Morgan, Brennan, & Zercher, 1997) and the nature of services provided (Hanson et al., 1998). A central value in EI/ECSE has been to make programs culturally appropriate for infants, young children, and families (Lynch, 1998). This has occurred through the development of culturally appropriate curriculum and practices for inclusive and general early childhood programs (Catlett, Winton, & Santos, 2000), as well as models of EI/ECSE services for children and families from specific cultural groups (Bruder, Anderson, Schutz, & Caldera, 1991).

Conclusion

From the application of different psychological and education theories, practitioners in EI/ECSE have developed, we propose, an implicit theory of practice. In this article, we have proposed a number of tenets for such a theory. Also, for each tenet we have provided examples of evidence-based or value-based practices associated (or assumed to be associated for value-based practices) with positive outcomes for children and families and/or the nature of services provided. The emphasis on grounding practice in supportive evidence is a critical direction in EI/ECSE, and a future direction for EI/ECSE may be to more closely document the empirical foundation for value-based practices. Recently, the Division for Early Childhood of the Council for Exceptional Children conducted a comprehensive review of the EI/ECSE literature from the 1990s, which served as one basis for establishing recommended practices (Smith et al., 2002). Such a review process, with the intent of providing an empirical basis for practice, is unprecedented in EI/ECSE or most other areas of special education and undoubtedly will lead the field in positive new directions. However, there are still questions to address: What level or degree of evidence is necessary for declaring a practice effective? For what types of children are the specific practices effective (Guralnick, 1997)? How does the field support the use of evidence-based techniques in EI/ECSE? How can the gap between effective practices and actual practice be reduced efficiently? These are challenges that await us in the future.

AUTHORS' NOTES

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2. This article is dedicated to the memory of Mary A. McEvoy, a close colleague and contributor to the field of EI/ECSE.

NOTE

By "evidence-based practice," we mean empirical and published research that documents the relationship of practices to outcomes for

children, families, professionals, and systems. The purpose of this article was not to conduct a synthesis of the EI/ECSE literature but rather to propose a theory that guides practice and to illustrate that scientifically based practices underlie this theory. In doing this, we intend not to engage the current controversy about the definition of science in education (see Jacob & White, 2002).

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